

EMARKS

I. Drawings

The Examiner indicated that the drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: # 60, 62, and 84. The Examiner indicated that a proposed drawing correction, corrected drawings, or amendments to the specification to add the reference sign(s) in the description, are required in reply to the Office Action to avoid abandonment of the application.

The Applicants have amended the specification, as indicated herein, to illustrate that a modified portion 84 is located proximate to leveling portion 88. Additionally, the specification has been amended to indicate that in FIG. 3, chuck 34 is illustrated at a first position 60 and at a second position 62. It is believed that such amendments to the specification do not constitute new matter, but are merely clarifying in nature. The Applicants thus believe that the objection to the drawings has now been overcome. Applicants respectfully request withdrawal of the objection to the drawings.

II. Rejections Under 35 U.S.C. §112

The Examiner rejected claims 1-10 under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. The Examiner argued that the omitted structural cooperative relationships are: the structural connection and/or location of the gauge with respect to the apparatus as claimed. Claims 2-10 were rejected due to their dependency on claim 1.

The Applicants have amended claim 1 such that claim 1 is now directed toward an apparatus for preventing damage to a chamber wall by a baffle plate in a semiconductor fabrication system during a semiconductor fabrication operation, the apparatus comprising: an electrostatic chuck associated with the semiconductor fabrication system, wherein the

electrostatic is moveable from a first position to a second position; and a gauge for measuring a gap between the baffle plate and the chamber wall, hereby preventing damage to the chamber wall by the baffle plate during a movement of the electrostatic chunk during the semiconductor fabrication operation of the semiconductor fabrication system, wherein the gauge is located proximate to the electrostatic chuck at the second position of the electrostatic chuck.

Thus, the location of the gauge with respect to the chuck and therefore the apparatus itself is now indicated in amended claim 1. Similarly, claims 2-10 are corrected due to the revisions to amended claim 1, which are supported by Applicants' specification. Applicants therefore believe that the rejection to claims 1-10 under 35 U.S.C. 112, second paragraph, has been traversed. Applicants respectfully request withdrawal of the rejection to claims 1-10 under 35 U.S.C. 112, second paragraph.

III. Rejections Under 35 U.S.C. §102

The Examiner rejected claims 1-3, 5, 11-13 and 15 under 35 U.S.C. 102(b) as being anticipated by Admitted Prior Art (hereinafter APA). The Examiner argued that the APA discloses an apparatus comprising a gauge (92) for measuring a gap between the baffle and the chamber wall (referring to Fig. 4 and pg. 13, lines1-5 of the specification) in order to level the electrostatic chuck, which can also translate into prevention of peeling or damaging the chamber wall. The Examiner argued that APA discloses an apparatus for use in various semiconductor fabrication operations (e.g., wet cleaning semiconductor operations). The Examiner further argued that the APA discloses what is considered, as best understood by the Examiner, a horizontal gap gauge (92).

The Applicants respectfully disagree with this assessment. APA discloses a gauge 92, which is not a horizontal gap gauge but rather one that is vertically positioned. Additionally, as explained in Applicants' specification, gauge 92 cannot properly measure a gap formed between

first position 98 and second position 100, which can result in damage to parts and elements associated with ESC 34 during semiconductor processing or fabrication operations.

The Applicants' specification also explains that one of the primary problems associated with the APA, including prior art block diagram 90, stems from the fact that an associated chamber apparatus can be scratched by baffle plate 16 during movement of ESC 34 in a vertical direction (i.e., up and down) and from a transfer position to a process position (e.g., first position 98 to second position 100). Gauge 92 is inadequate for measuring such a gap movement, unlike the leveling mechanism 78 (i.e. leveling gauge) illustrated in FIG. 3. Leveling mechanism 78 of FIG. 3 is configured in a manner, which permits accurate measurement of the gap between a baffle plate, such as, for example, baffle plate 16 and a chamber wall. The configuration illustrated in FIG. 4 (i.e., APA) does not permit such measurement. Therefore, the Examiner is incorrect in asserting that APA discloses Applicants' invention, when in fact, APA is plagued by a number of problems, which have just been enumerated and which are overcome by Applicants' invention.

With respect to the preamble of the claims, the Examiner argued that the preamble does not provide enough patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. The Examiner further argued that it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate in the claims apparatus from a prior art apparatus satisfying the claimed structure limitation.

The Applicants respectfully disagree with this assessment. Claim 1 has been amended such that the preamble is now directed toward a gauge apparatus for use in a semiconductor fabrication system, the apparatus comprising: an electrostatic chuck associated with a semiconductor fabrication system, wherein the electrostatic is moveable from a first position to a

second position; and a gauge for measuring a gap between a baffle plate and a chamber wall, and preventing damage to the chamber wall by the baffle plate during a movement of the electrostatic chunk during a semiconductor fabrication operation of the semiconductor fabrication system, wherein the gauge is located proximate to the electrostatic chuck at the second position of the electrostatic chuck. It is believed that the simplified preamble now overcomes the Examiner's comments with respect to the preamble.

Regarding claims 11-13 and 15, the Examiner argued that the method as stated in claims 11-13 and 15 can be met by the regular operation of the apparatus and system disclosed by the APA. The Applicants respectfully disagree with this assessment because the Examiner has not adequately explained how APA prevents damage to the chamber wall and the baffle plate. Also, as explained previously, gauge 92 of the APA is inadequate for measuring a gap movement. APA does not anticipate the step of measuring a gap between the baffle plate and the chamber wall utilizing a gauge integrated with the semiconductor fabrication system, in response to moving the electrostatic chunk to thereby prevent damage to the chamber wall by the baffle plate, which is indicated in claim 11.

The Applicants believe that the rejection to claims 1-3, 5, 11-13 and 15 under 35 U.S.C. 102(b) as being anticipated by Admitted Prior Art (hereinafter APA) has been traversed. Applicants therefore request withdrawal of the rejection to 1-3, 5, 11-13 and 15 under 35 U.S.C. 102(b).

IV. Rejections Under 35 U.S.C. §103

In the above-captioned Office Action, the Examiner rejected claims 4 and 14 as being unpatentable over APA. The Examiner argued that the APA discloses an apparatus as stated in paragraph 4 above.

The Examiner admitted that the APA does not disclose the particular orientation of the gap gauge, i.e., horizontal, as stated in claim 4. The Examiner also admitted that the APA does not disclose a leveling gauge as stated in claim 6.

With respect to claim 4, the Examiner argued that the APA discloses a gap gauge (92), which as best understood by the Examiner can be considered a horizontal gap gauge due to its orientation. However, the Examiner stated, changing the location of the gap gauge from the location shown by the APA to a location measuring the horizontal gap, absent any criticality, is only considered to be an obvious modification of the APA apparatus that a person having ordinary skill in the art at the time the invention was made would be able to provide using routine experimentation since the courts have held that there is no invention in shifting the position if the operation of the device would not be thereby modified. The Applicants respectfully disagree with this assessment.

Claim 4, which is dependent upon claim 1, indicates that the gauge comprises a horizontal gap gauge. The APA does not teach or suggest a gauge apparatus for use in a semiconductor fabrication system, wherein the apparatus comprises: an electrostatic chuck associated with a semiconductor fabrication system, wherein the electrostatic is moveable from a first position to a second position; and a gauge for measuring a gap between a baffle plate and a chamber wall, and preventing damage to the chamber wall by the baffle plate during a movement of the electrostatic chuck during a semiconductor fabrication operation of the semiconductor fabrication system, wherein the gauge is located proximate to the electrostatic chuck at the second position of the electrostatic chuck.

The APA discloses a gauge 92, which is not a horizontal gap gauge but rather one that is vertically positioned. Additionally, as explained in Applicants' specification, gauge 92 cannot properly measure a gap formed between first position 98 and second position 100, which can result in damage to parts and elements associated with ESC 34 during semiconductor processing or fabrication operations.

The Applicants' specification also explains that one of the primary problems associated with the APA, including prior art block diagram 90, stems from the fact that an associated chamber apparatus can be scratched by baffle plate 16 during movement of ESC 34 in a vertical direction (i.e., up and down) and from a transfer position to a process position (e.g., first position 98 to second position 100). Gauge 92 is inadequate for measuring such a gap movement, unlike the leveling mechanism 78 (i.e. leveling gauge) illustrated in FIG. 3. Leveling mechanism 78 of FIG. 3 is configured in a manner, which permits accurate measurement of the gap between a baffle plate, such as, for example, baffle plate 16 and a chamber wall. The configuration illustrated in FIG. 4 (i.e., APA) does not permit such measurement.

Therefore, the Examiner is incorrect in asserting that APA suggests or teaches Applicants' claim 4, when in fact, APA is plagued by a number of problems, which have just been enumerated and which are overcome by Applicants' invention. Additionally, the Examiner has not explained why one skilled in the art would have been motivated to have modified the APA to derive all of the features of Applicants' claim 4, including all of the features of claim 1, upon which claim 4 depends.

With respect to the method as stated in claim 14, the Examiner stated that the method in claim 14 can be met by the regular operation of the apparatus and system disclosed by the APA. The Applicants disagree with this assessment for the reasons provided up with respect to claim 4, which also apply equally to the rejection to claim 14.

The Applicants thus believe that the rejection to claims 4 and 14 as being unpatentable over the APA have been traversed. Applicants therefore request withdrawal of the rejection to claims 4 and 14 under 35 U.S.C. §103.

The Examiner further rejected claims 6 and 16 under 35 U.S.C. 103(a) as being unpatentable over the APA in view of Hunter (U.S. Patent No. 6,468,816). The Examiner argued that the APA discloses an apparatus as stated in paragraph 4 above. The Examiner admitted that the APA does not disclose a leveling gauge as stated in claims 6 and 16. The Examiner argued, however, that Hunter discloses a processing system having a processing chamber (12) having a bubble level (16) for determining the inclination of the blade (18) in order to avoid misalignment during a process. Therefore, the Examiner argued, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to add a bubble level/leveling gauge as taught by Hunter in the apparatus disclosed by APA in order to correct from damages due to expansion/shrinkage on the surface to be leveled that may result in malfunction of the process overtime. The Applicants respectfully disagree with this assessment.

Both APA and Hunter do not prevent damage to a chamber wall by a baffle plate in a semiconductor fabrication system during a semiconductor fabrication operation. Hunter does not indicate the use of a baffle, and it is not clear that configuration of Hunter will prevent damage to a chamber wall by a baffle plate, because the configuration of Hunter does not suggest or teach the use of a baffle. As explained previously, the APA also is plagued by several problems, which result in damage to the chamber apparatus by the baffle plate 16 during movement of the ESC 34 in a vertical direction.

With respect to the method as stated in claim 16, the Examiner argued that the method in claim 16 can be met by the regular operation of the apparatus and system disclosed by the APA. Applicants disagree with this assessment because, as explained above, neither the APA and/or Hunter teach or suggest an apparatus or method which prevents damage to chamber walls by a baffle plate.

The language of the references (i.e., APA and/or Hunter) may not be taken out of context and combined them without motivation, in effect producing the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context. The resultant combination would not yield the invention as claimed. The claims are rejected under 35 U.S.C. §103 and no showing has been made to provide the motivation as to why one of skill in the art would be motivated to make such a combination, and further fails to provide the teachings necessary to fill the gaps in these references in order to yield the invention as claimed.

The rejections under 35 U.S.C. §103 have provided no more motivation than to simply point out the individual words of the Applicant's claims among the references, but without the reason and result as provided in the Applicant's claims and specification, and without reason as to why and how the references could provide the Applicant's invention as claimed. Hindsight cannot be the basis for motivation, which is not sufficient to meet the burden of sustaining a 35 U.S.C. §103 rejection.

Thus, the claims of the present invention are not taught or suggested by Hunter and/or APA. Combining these references fails to teach or yield the invention as claimed. The combination of these references fails to teach or suggest all the elements of the claims. Further, one of skill in the art would not be motivated to make such a combination. Therefore, the present invention is not obvious in light of any combination of Hunter and/or APA. Withdrawal of the §103(a) rejections to claims 4, 14 and 6, 16 as being unpatentable over Hunter and/or APA is respectfully requested.

V. Allowable Subject Matter

The Examiner indicated that claims 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. The Applicants have therefore rewritten claims 17-20 as newly submitted independent claim 22.

The Examiner further indicated that claims 7-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in the Office Action and to include all of the limitations of the base claim and any intervening claims. The Applicants have therefore rewritten claims 7-10 as newly submitted independent claim 21.

VI. Conclusion

Applicants have amended the claims and specification to more particularly disclose the invention claimed thereof. It is believed that such amendments do not constitute new matter, but are rather clarifying in nature. Additionally, it is believed that support for such amendments is provided within the specification, and that the specification adequately enables such amendments. Attached hereto is a marked-up version of the changes made to the claims by the current response, which is captioned "VERSIONS WITH MARKING TO SHOW CHANGES MADE."

In view of the foregoing discussion, Applicants have responded to each and every rejection of the Official Action, and respectfully request that a timely Notice of Allowance be issued. Applicants have clarified the structural distinctions of the present invention by amending the claims. No new subject matter has been introduced as a result of this amendment. Applicants respectfully submit that the foregoing discussion does not present new issues for consideration and that no new search is necessitated. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §102 and §103, and further examination of the present application.

Applicants have demonstrated that their disclosed and claimed invention is novel and non-obvious relative to the prior art. Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the

undersigned representative to conduct an interview in an effort to expedite prosecution in connection with the present application. The Commissioner is hereby authorized to charge Deposit Account No. 50-0484 any fee amount due as a result of this amendment.

In view of the above remarks, allowance of all claims pending is respectfully requested. If a telephone conference would be of assistance in advancing the prosecution of this application, the Examiner is invited to call applicants' attorney at the below-indicated telephone number.

Respectfully submitted,
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VERSIONS WITH MARKING TO SHOW CHANGES MADE

IN THE SPECIFICATION

Please amend the paragraph beginning at page 12, line 10 as follows:

-- FIG. 3 illustrates a block diagram 9 of a gauge apparatus status, in accordance with a preferred embodiment of the present invention. As explained previously, in FIGS. 1, 2, and 3, like parts are indicated by identical reference numerals. In FIG. 3, a leveling portion 78 and 88 are indicated, along with a modified portion 74. Similarly, a modified portion 84 is located proximate to leveling portion 88. In FIG. 3, chuck 34 is illustrated at first position 60 and at a second position 62. --

IN THE CLAIMS

Please amend claim 1 and provide newly submitted claims 21 and 22 as follows:

1. (Amended) A gauge ~~An apparatus for use in a for preventing damage to a chamber wall by a baffle plate in a semiconductor fabrication system during a semiconductor fabrication operation,~~ said apparatus comprising:

an electrostatic chuck associated with a said semiconductor fabrication system, wherein said electrostatic is moveable from a first position to a second position; and

a gauge for measuring a gap between a said baffle plate and a said chamber wall, hereby and preventing damage to said chamber wall by said baffle plate during a movement of said electrostatic chunk during a said semiconductor fabrication operation of said semiconductor fabrication system, wherein said gauge is located proximate to said electrostatic chuck at said second position of said electrostatic chuck.

2. (original) The apparatus of claim 1 wherein said semiconductor fabrication operation comprises a wet cleaning semiconductor operation.

3. (original) The apparatus of claim 1 wherein said gauge is adapted for use in leveling said electrostatic chunk.

4. (original) The apparatus of claim 1 wherein said gauge comprises a horizontal gap gauge.

5. (original) The apparatus of claim 1 wherein said gauge is adapted for use in preventing polymer peeling of said chamber wall.

6. (original) The apparatus of claim 1 wherein said gauge comprises a leveling gauge.

7. (original) The apparatus of claim 1 wherein said semiconductor fabrication system comprises dual-rotate-magnet (DRM).
8. (original) The apparatus of claim 7 wherein said semiconductor fabrication system comprises a focus ring.
9. (original) The apparatus of claim 8 wherein said movement of said electrostatic chunk during said semiconductor fabrication operation comprises a vertical movement.
10. (original) The apparatus of claim 8 wherein said movement of said electrostatic chunk during said semiconductor fabrication operation comprises a horizontal movement.
11. (original) A method for preventing damage to a chamber wall by a baffle plate in a semiconductor fabrication system during a semiconductor fabrication operation, said method comprising the steps of:
 - moving an electrostatic chuck associated with said semiconductor fabrication system during said semiconductor fabrication operation; and
 - measuring a gap between said baffle plate and said chamber wall utilizing a gauge integrated with said semiconductor fabrication system, in response to moving said electrostatic chuck to thereby prevent damage to said chamber wall by said baffle plate.
12. (original) The method of claim 11 wherein said semiconductor fabrication operation comprises a wet cleaning semiconductor operation.
13. (original) The method of claim 11 wherein said gauge is adapted for use in leveling said electrostatic chunk.
14. (original) The method of claim 11 wherein said gauge comprises a horizontal gap gauge.

15. (original) The method of claim 11 wherein said gauge is adapted for use in preventing polymer peeling of said chamber wall.

16. (original) The method of claim 11 wherein said gauge comprises a leveling gauge.

17. (original) The method of claim 11 wherein said semiconductor fabrication system comprises dual-rotate-magnet (DRM).

18. (original) The method of claim 17 wherein said semiconductor fabrication system comprises a focus ring.

19. (original) The method of claim 18 wherein said movement of said electrostatic chunk during said semiconductor fabrication operation comprises a vertical movement.

20. (original) The method of claim 18 wherein said movement of said electrostatic chunk during said semiconductor fabrication operation comprises a horizontal movement.

21. (Newly Submitted) A gauge apparatus for use in a semiconductor fabrication system, said apparatus comprising:

an electrostatic chuck associated with a semiconductor fabrication system comprising a dual-rotate-magnet (DRM) and a focus ring, wherein said electrostatic is moveable from a first position to a second position; and

a gauge for measuring a gap between a baffle plate and a chamber wall, and preventing damage to said chamber wall by said baffle plate during a movement of said electrostatic chunk during a semiconductor fabrication operation of said semiconductor fabrication system, wherein said gauge is located proximate to said electrostatic chuck at said second position of said electrostatic chuck, wherein said movement of said electrostatic chunk during said semiconductor fabrication operation comprises a vertical movement.

22. (Newly Submitted) A method for preventing damage to a chamber wall by a baffle plate in a semiconductor fabrication system during a semiconductor fabrication operation, said method comprising the steps of:

associating an electrostatic chuck with a semiconductor fabrication system comprising a dual-rotate-magnet (DRM) and a focus ring, wherein said electrostatic is moveable from a first position to a second position; and

measuring a gap between formed a baffle plate and a chamber wall and preventing damage to said chamber wall by said baffle plate during a movement of said electrostatic chunk during a semiconductor fabrication operation of said semiconductor fabrication system utilizing a gauge that is located proximate to said electrostatic chuck at said second position of said electrostatic chuck, wherein said movement of said electrostatic chunk during said semiconductor fabrication operation comprises a vertical movement.